

## **Sustaining Long-Term Water Quality Monitoring Programmes: A New Zealand Case Study**

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### **Biographical Sketch of Author**

Mike is a stream biologist with NIWA Ltd., a research and consultancy firm owned by the New Zealand government. NIWA operates the National River Water Quality Network (NRWQN), which is the only national-scale surface water quality monitoring network in New Zealand. Mike has been working with data from the NRWQN since he joined NIWA in 1995. He has been heavily involved in National State of the Environment reporting on behalf of the government, and has carried out trend analyses for both water quality determinants and biological indicators. One of his principle research interests is the description and explanation of temporal patterns in river ecosystems, and he has recently been investigating the influence of climate variability on patterns in water quality and invertebrate communities. Mike is currently overseeing a review of the NRWQN.

### **Abstract**

Long-term water quality monitoring programmes can face a serious conflict between the maintenance of consistency in monitoring methodology (the where, when and what), which is often required to provide high quality information, and the evolving information needs of the resource managers the programme is designed to support. In this paper we describe how these issues have been dealt with in relation to New Zealand's National River Water Quality Network (NRWQN). This monitoring programme was set up in 1989 to i) detect significant trends in water quality; and ii) develop better understandings of the nature of the water resources and hence to better assist their management. The Network consists of 77 sites located throughout the country. All sites have intensive and reliable hydrological information. Regional field teams carry out monthly sampling for 14 water quality parameters, and all samples are returned to a single water quality laboratory for analysis using standard methods. Over the 14 years of NRWQN operation there have been major challenges to the sustainability of the programme through changes in the legislative, organisational, scientific and environmental frameworks within which the Network operates. We describe these changes, and outline the review process whereby we are seeking to meet the changing information needs of resource managers, while also maintaining consistency in monitoring methodology. We suggest that the apparent conflicting demands are not mutually exclusive, and information from existing design can often be tailored to meet changing management expectations.